

FIG. 1

Donald L. Stephens, Jr.  
Our Ref. No. 4630-59094/DLS/JOC  
Inventors: Croteau et al.  
For: TRANSACYLASES OF THE PACLITAXEL  
BIOSYNTHETIC PATHWAY  
Application No. 09/866,570, filed: May 25, 2001  
Mailed: September 20, 2001  
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Tryptic Peptide Fragment

Peptide Sequence

SEQ ID NO: 29	TTLQLSSIDNLPGVR
SEQ ID NO: 30	ILVYYPPFAGR
SEQ ID NO: 31	FTCGGFVVGVSF
SEQ ID NO: 32	KGLAEIARGEVK
SEQ ID NO: 33	NLPNDTNPSSGYYGN

FIG. 2

0466570-59094-1

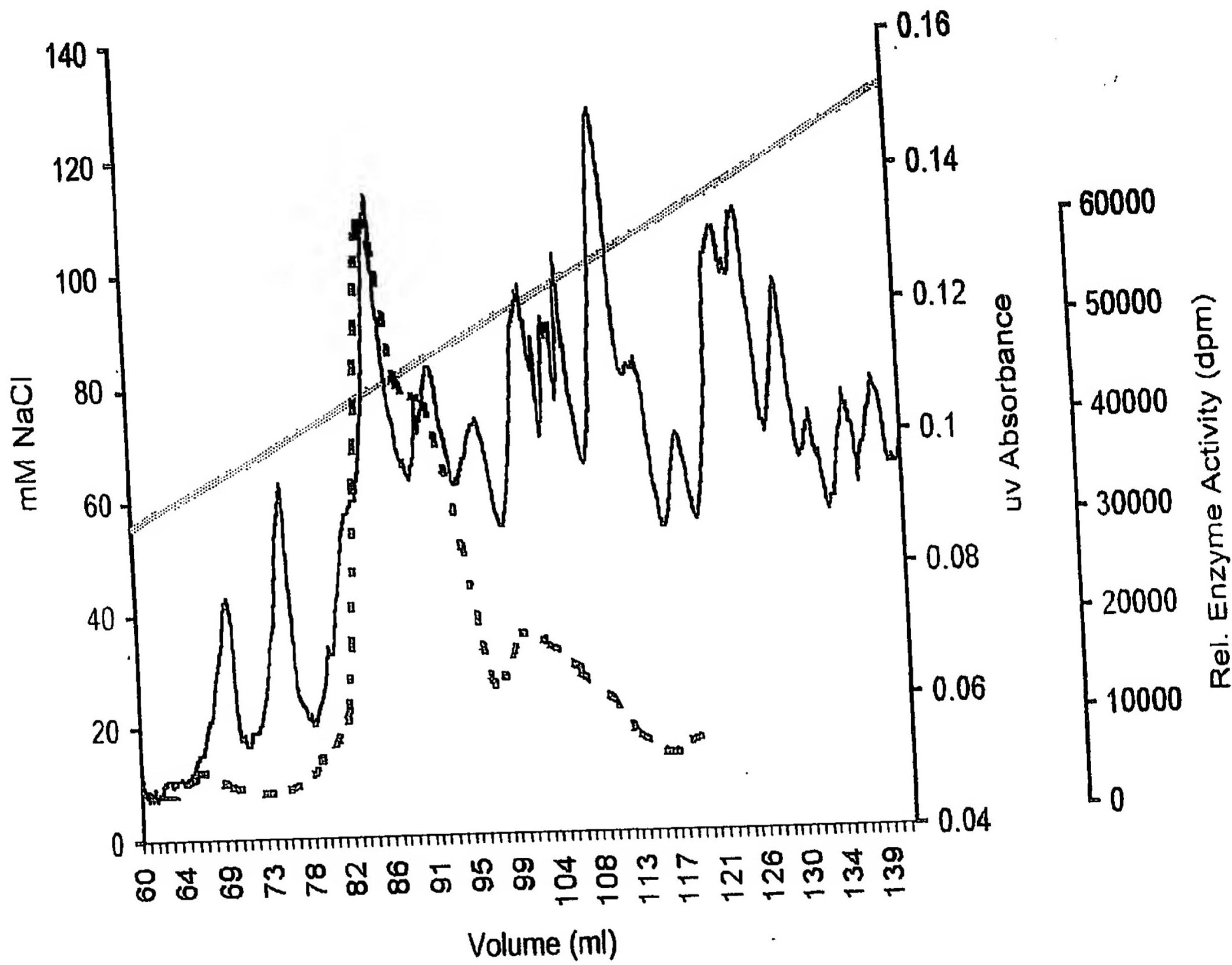


FIG. 3A

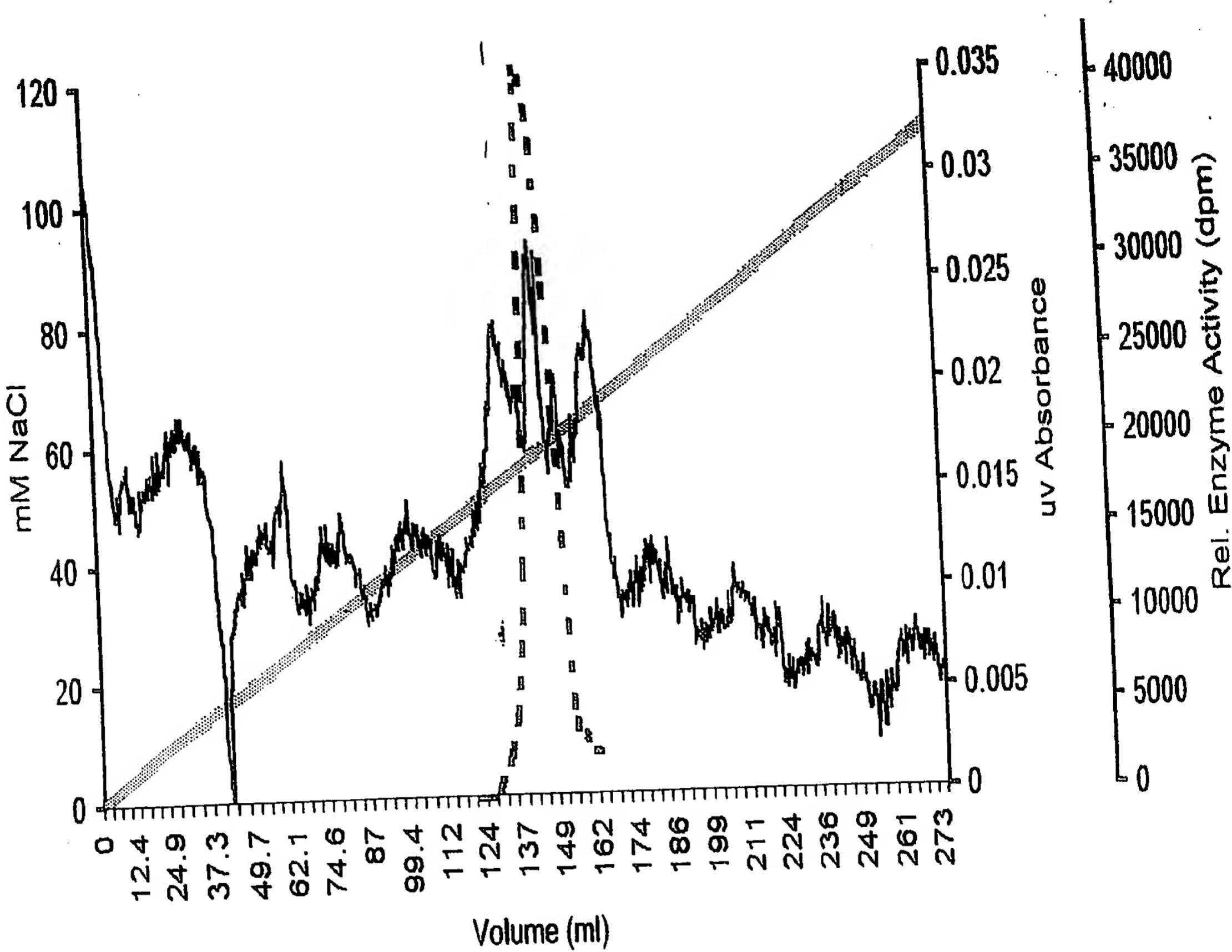


FIG. 3B

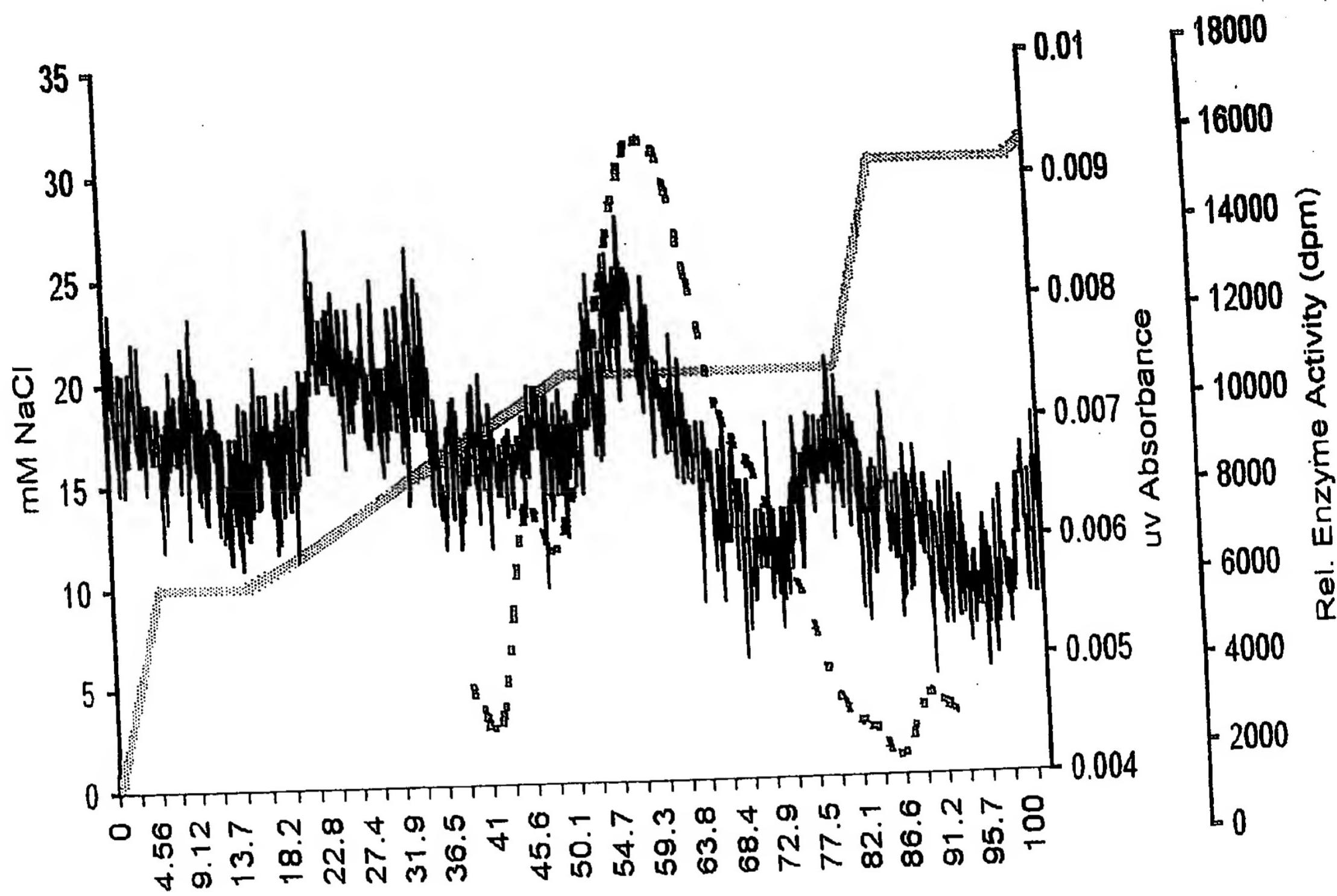
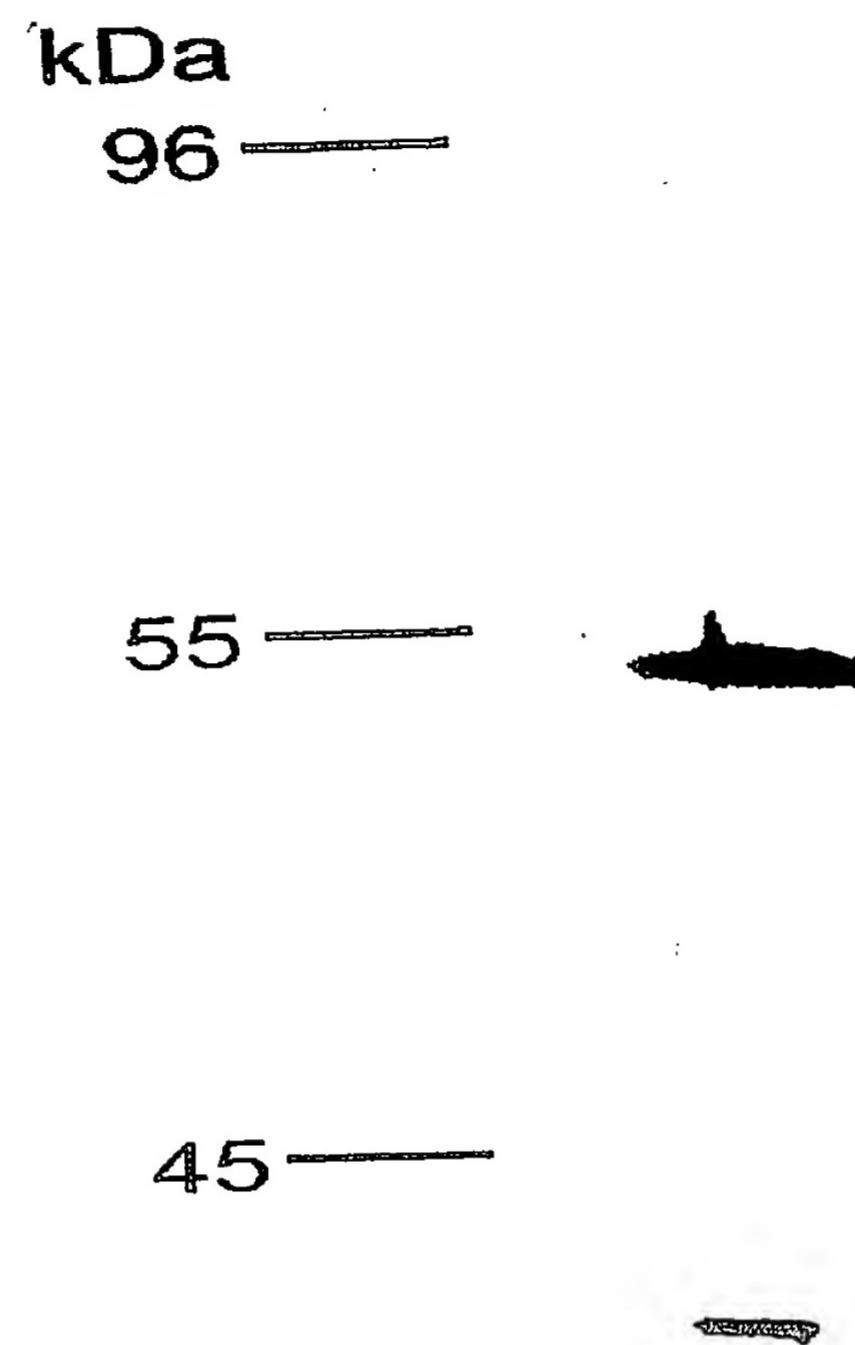


FIG. 3C

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**FIG. 3D**

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FROM PEPTIDE FRAGMENT SEQUENCE 2

NH2-	I	L	V	Y	Y	P	P	-COOH
5'	ATI	CTI	GTI	TAT	TAT	CCI	CC	3'
	T		C	C	C	C		
			A			A		

AT-FOR1

(SEQ ID NO: 34)

NH2-	Y	Y	P	P	F	A	G	-COOH
5'	TAT	TAT	CCI	CCI	TTT	GCI	GG	3'
	C	C	C	C	C	C		
		A		A		A		

AT-FOR2

(SEQ ID NO: 35)

FROM SEQUENCE HOMOLOGY CONSIDERATIONS

NH2-	F	Y	P	F	A	G	R	-COOH
5'	TTC	TAT	CCI	TTC	GCI	GGI	AG	3'
	T	C		T	C	C		
				A	A			

AT-FOR3

(SEQ ID NO: 36)

NH2-	Y	Y	P	L	A	G	R	-COOH
5'	TAC	TAT	CCI	TTI	GCI	GGI	AG	3'
	T	C		C	C	C	C	
				A	A			

AT-FOR4

(SEQ ID NO: 37)

NH2-	D	F	G	W	G	K	P	-COOH
3'	CTA	AAA	CCI	ACC	CCI	TTT	GG	5'
	G	G	C		C	C		
			A		A			

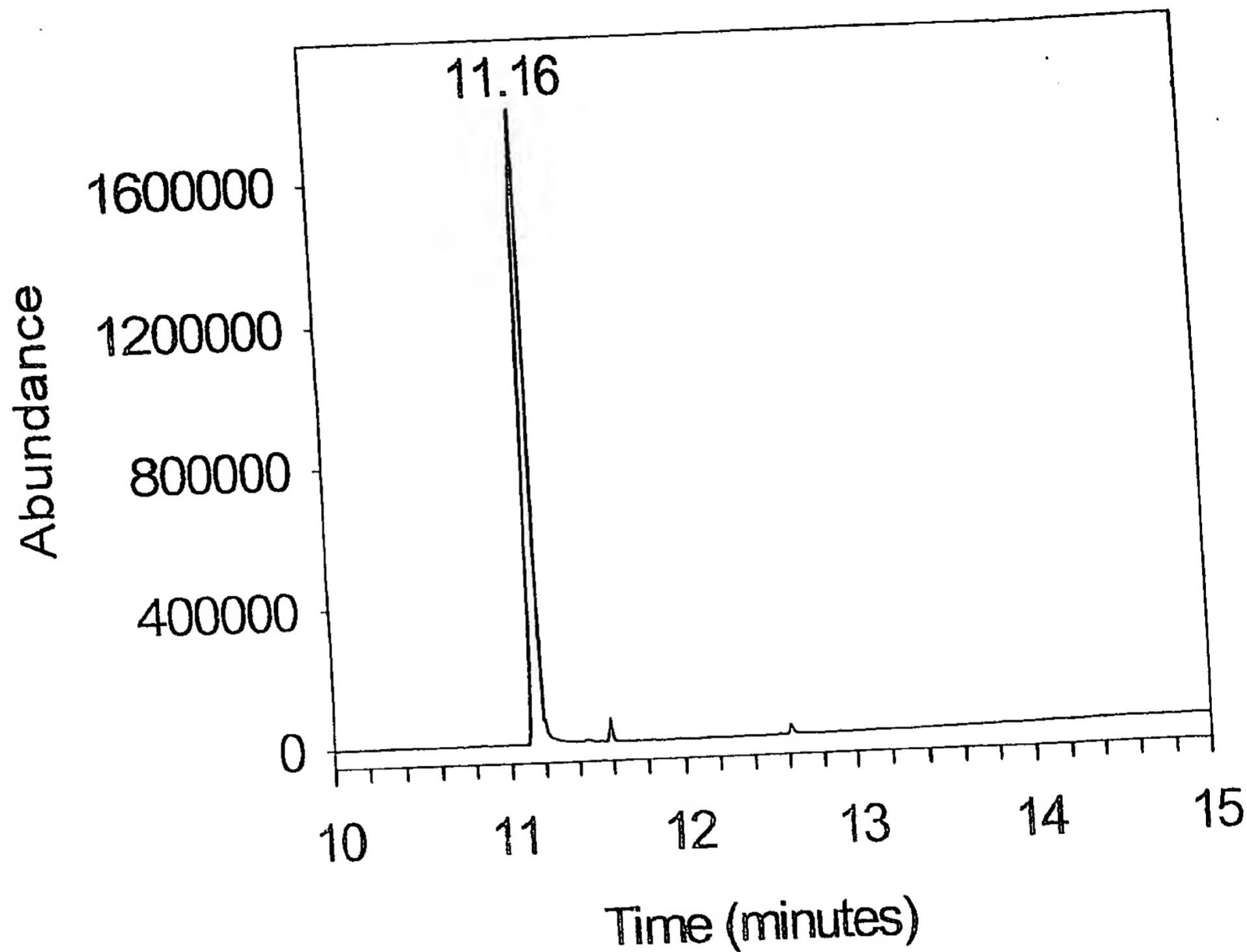
AT-REV1

(SEQ ID NO: 38)

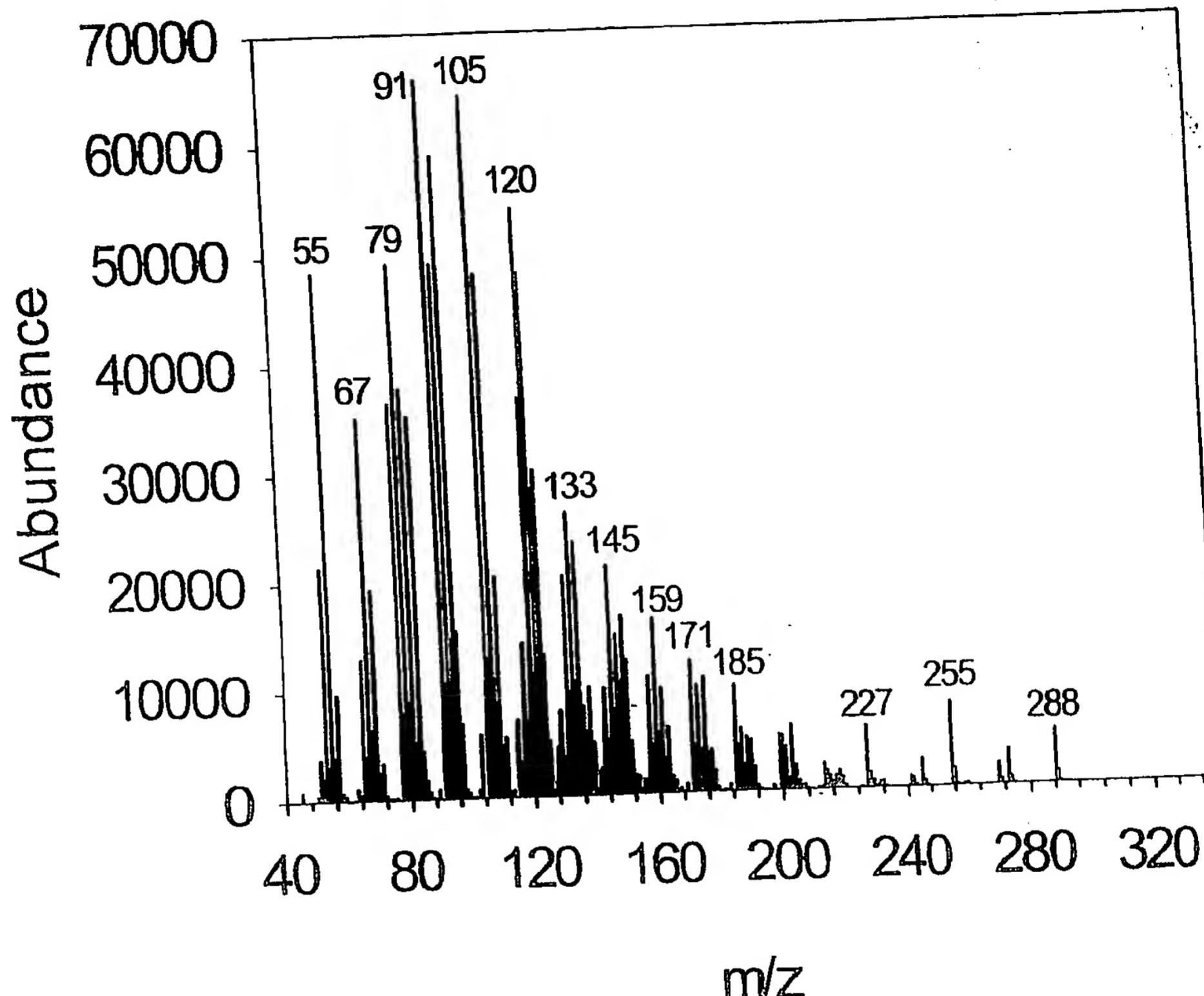
FIG. 4

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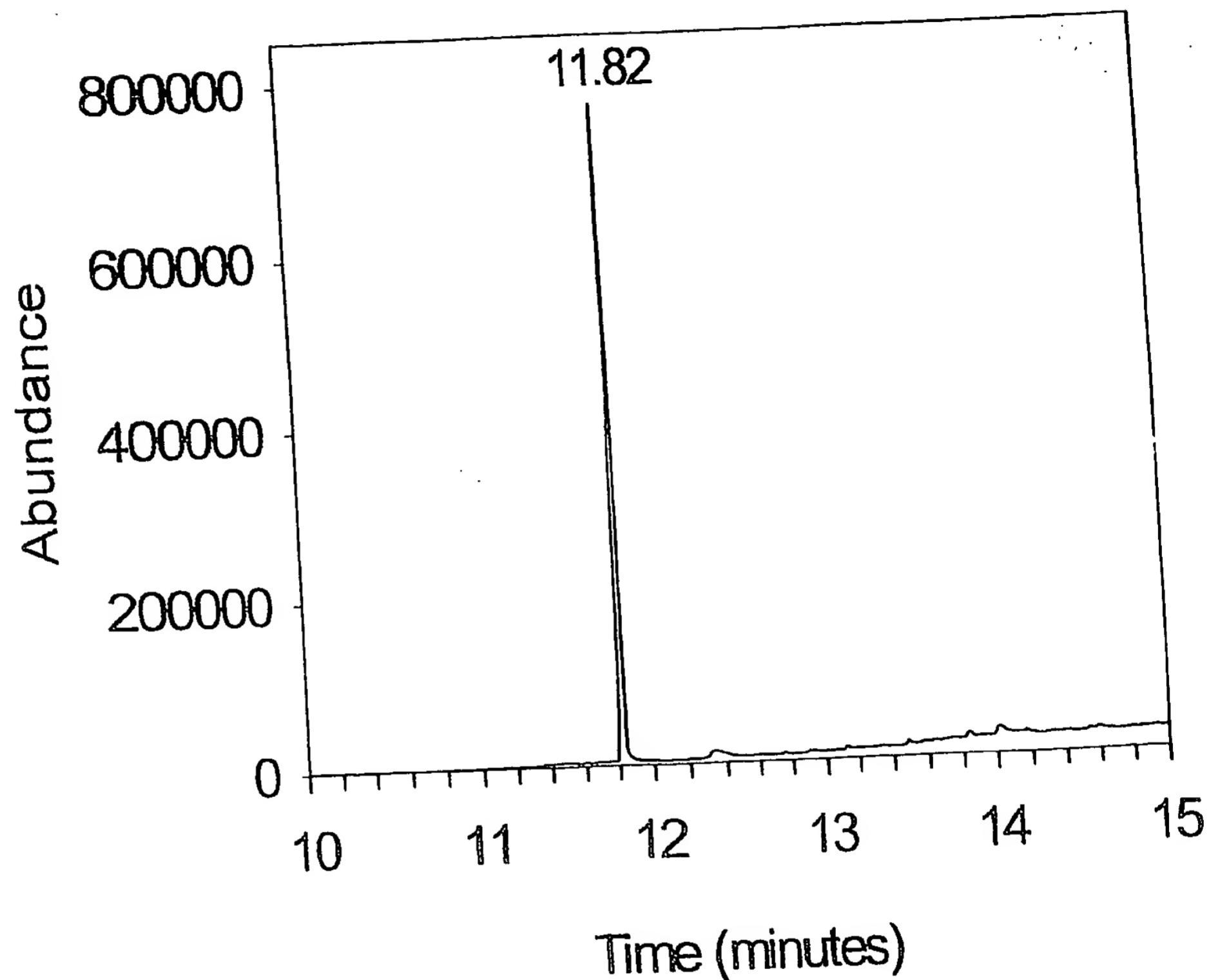
**FIG. 5A**



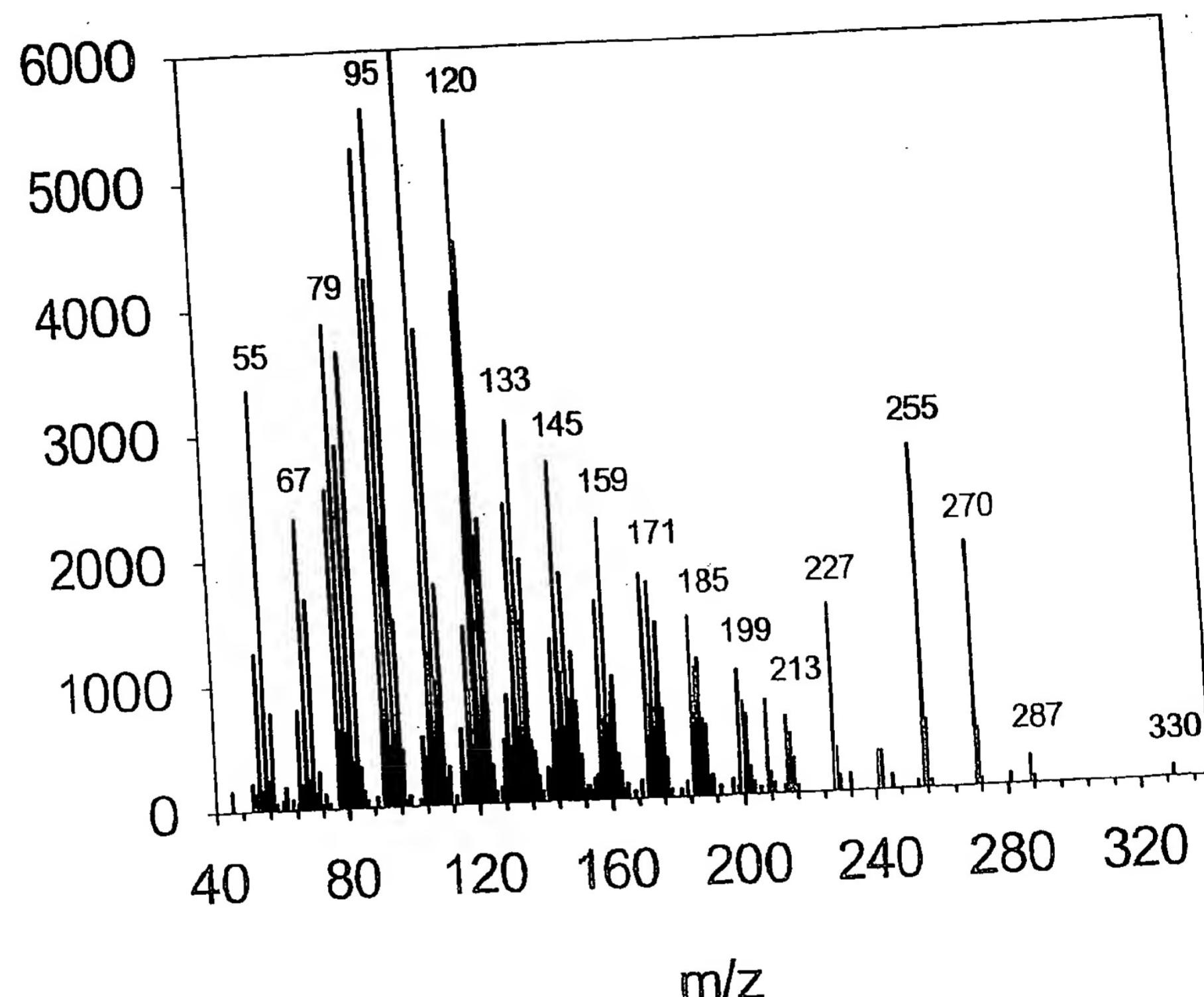
**FIG. 5B**

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**FIG. 5C**



**FIG. 5D**

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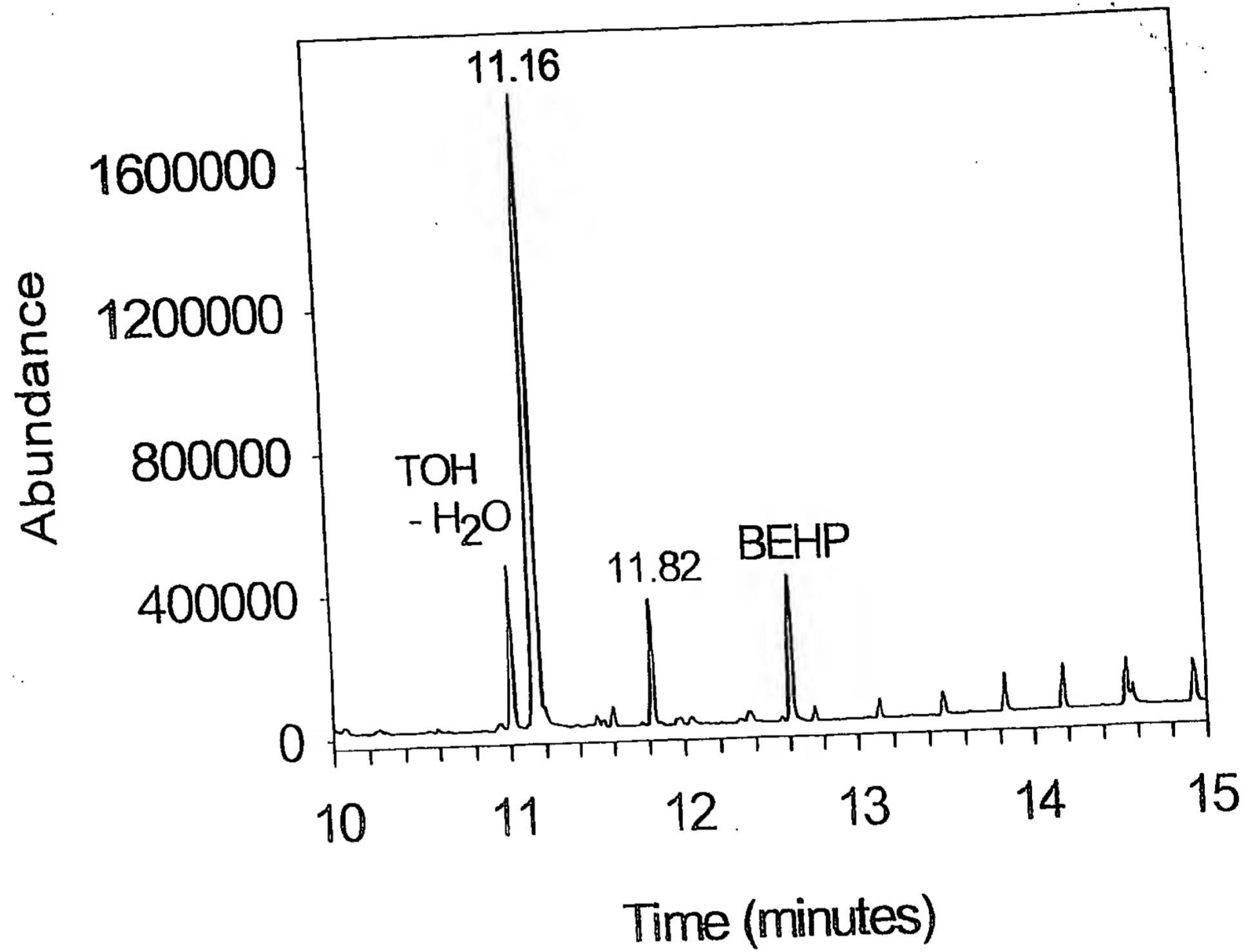
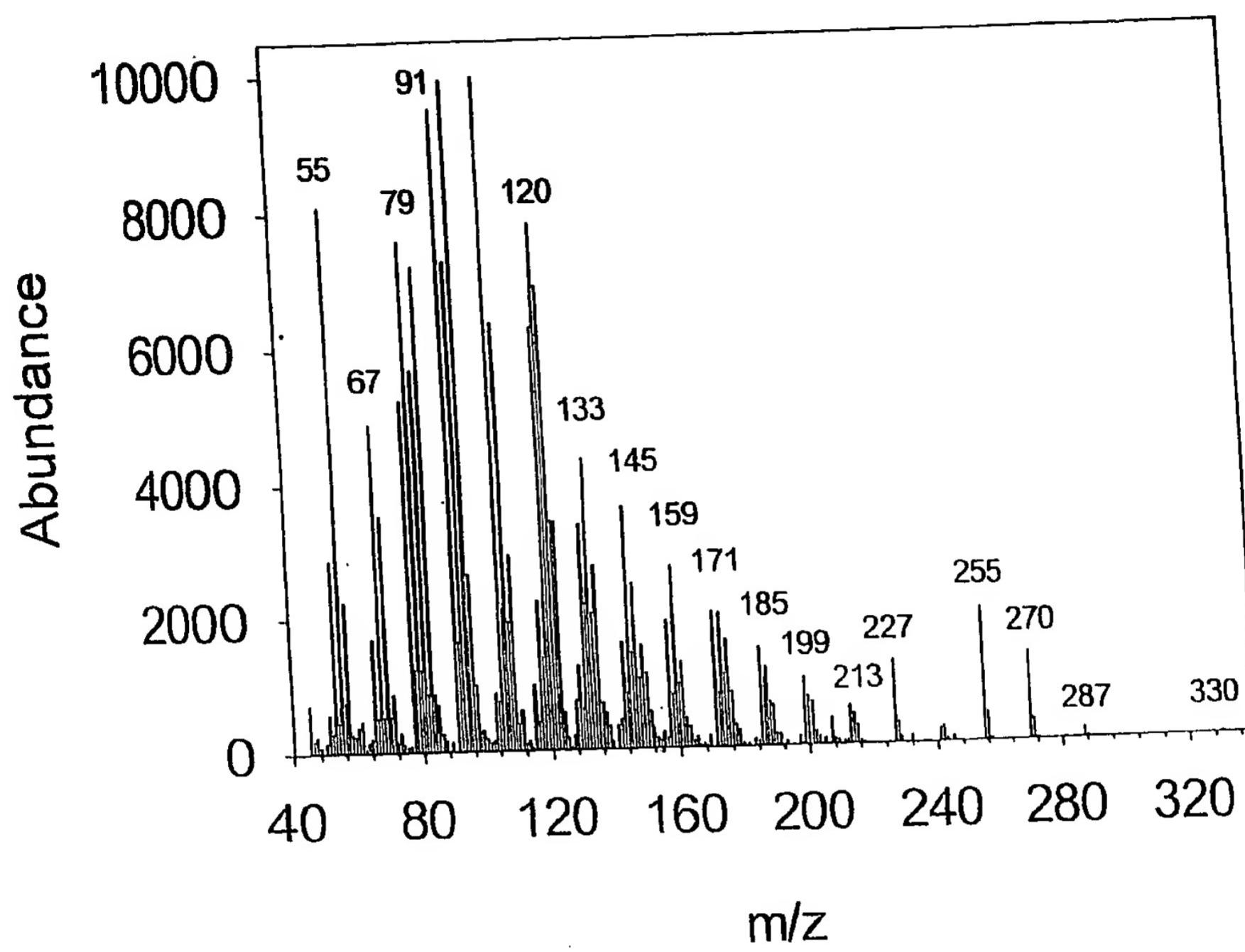
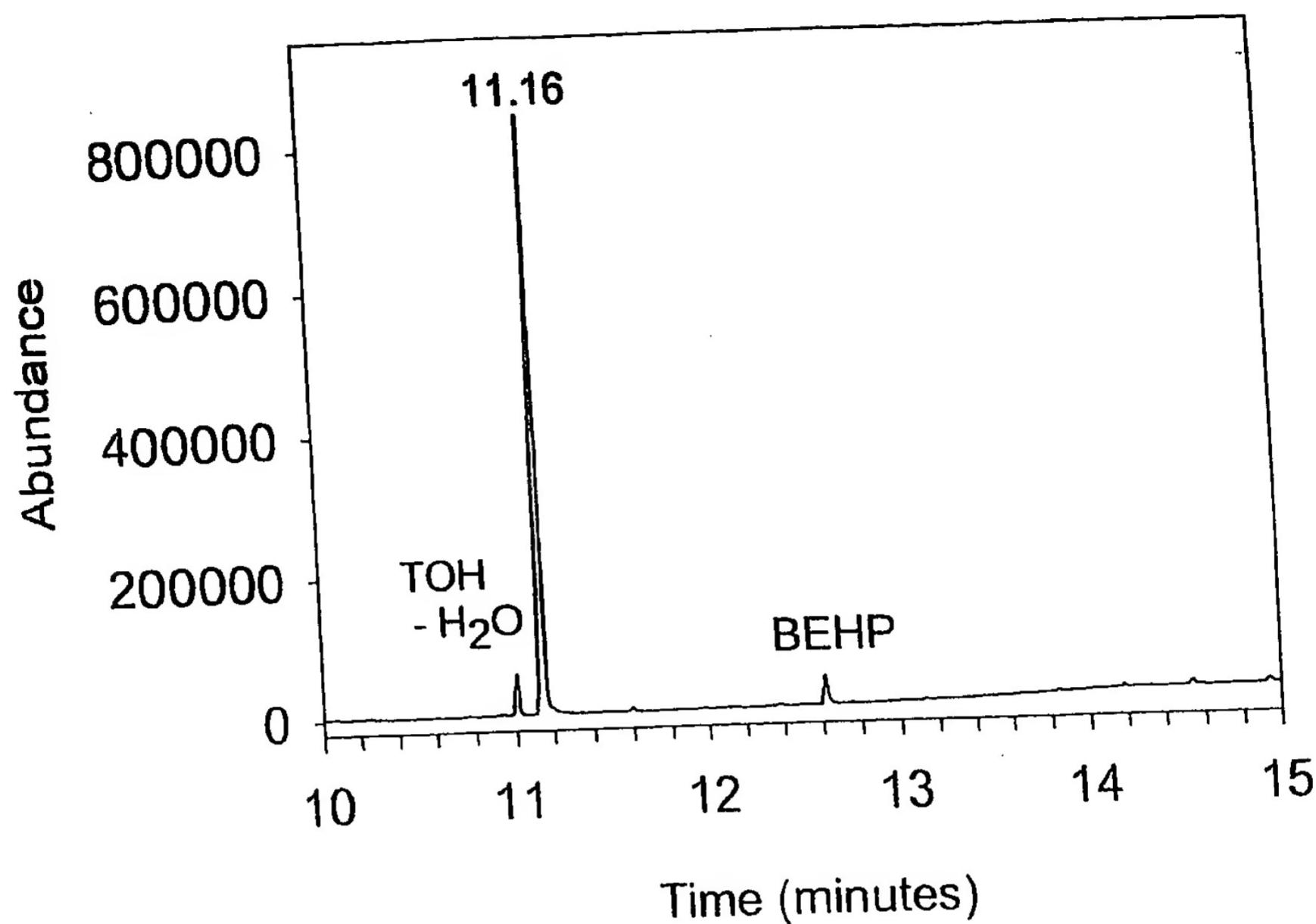


FIG. 5E



**FIG. 5F**



**FIG. 5G**

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TAX1 (SEQ ID NO: 28) . . . . .  
TAX2 (SEQ ID NO: 26) . . . . .  
aab61522 (SEQ ID NO: 61) . . . . .  
aab61523 (SEQ ID NO: 62) . . . . .  
aab95293 (SEQ ID NO: 63) . . . . .  
aab97723 (SEQ ID NO: 64) . . . . .  
aac17079 (SEQ ID NO: 65) M A A V S V A S A E L P P P P Q D G E T I L S N V P Q T L S G E D C K K Q R I Q R P K S K N A E K C T 50  
aac18062 (SEQ ID NO: 66) . . . . .  
aac227152 (SEQ ID NO: 67) . . . . .  
aac99311 (SEQ ID NO: 68) . . . . .  
aad12025 (SEQ ID NO: 69) . . . . .  
caa20531 (SEQ ID NO: 70) . . . . .  
caa64636 (SEQ ID NO: 71) . . . . .  
caa94432 (SEQ ID NO: 72) . . . . .  
cab06427 (SEQ ID NO: 73) . . . . .  
cab10318 (SEQ ID NO: 74) . . . . .  
cab10319 (SEQ ID NO: 75) . . . . .  
cab40761 (SEQ ID NO: 76) . . . . .

FIG. 6A

Donald L. Stephens, Jr.  
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TAX1 (SEQ ID NO: 28) . . . . .  
TAX2 (SEQ ID NO: 26) . . . . .  
aab61522 (SEQ ID NO: 61) . . . . .  
aab61523 (SEQ ID NO: 62) . . . . .  
aab95293 (SEQ ID NO: 63) . . . . .  
aab97723 (SEQ ID NO: 64) . . . . .  
aac17079 (SEQ ID NO: 65) V K C V N T C I R S G D G E G P I N I R R F Q R I A W Q I E G I Q V T V S C F E V T C G K T R S S S 100  
aac18062 (SEQ ID NO: 66) . . . . .  
aac27152 (SEQ ID NO: 67) . . . . .  
aac99311 (SEQ ID NO: 68) . . . . .  
aad12025 (SEQ ID NO: 69) . . . . .  
caa20531 (SEQ ID NO: 70) . . . . .  
caa64636 (SEQ ID NO: 71) . . . . .  
caa94432 (SEQ ID NO: 72) . . . . .  
cab06427 (SEQ ID NO: 73) . . . . .  
cab10318 (SEQ ID NO: 74) . . . . .  
cab10319 (SEQ ID NO: 75) . . . . .  
cab40761 (SEQ ID NO: 76) . . . . .

FIG. 6B

TAX1 (SEQ ID NO: 28) . . . . .  
TAX2 (SEQ ID NO: 26) . . . . .  
aab61522 (SEQ ID NO: 61) . . . . .  
aab61523 (SEQ ID NO: 62) . . . . .  
aab95293 (SEQ ID NO: 63) . . . . .  
aab97723 (SEQ ID NO: 64) . . . . .  
aac17079 (SEQ ID NO: 65) NNPHTTFFILSENNNQMGEEAAEQARGFHYTTRKQVITAALELO . . . DH 147  
aac18062 (SEQ ID NO: 66) . . . . .  
aac27152 (SEQ ID NO: 67) . . . . .  
aac99311 (SEQ ID NO: 68) . . . . .  
aad12025 (SEQ ID NO: 69) . . . . .  
caa20531 (SEQ ID NO: 70) . . . . .  
caa64636 (SEQ ID NO: 71) . . . . .  
caa94432 (SEQ ID NO: 72) . . . . .  
cab06427 (SEQ ID NO: 73) . . . . .  
cab10318 (SEQ ID NO: 74) . . . . .  
cab10319 (SEQ ID NO: 75) . . . . .  
cab40761 (SEQ ID NO: 76) . . . . .  
MEKTDLHYNLLIEKVMVGPSPEL . . . . . P 23  
MGRFNYDMIERVIVAPCLOQ . . . . . P 21  
MEKNVEILSRREIVKEPSSPEZ . . . . . 0 22  
MPSLEKSYTTIISRNRVFPDQKST . . . . . DD 22  
MASCIQELHFTHLHIPPYTINQQFLVHPSSPEANQSP . . . . . LV 25  
MGSSYQESPPILLEDLKYTIKESTLTKLIKPSSEET . . . . . SE 34  
MESGKISVETETLSKTKLIKPSSETP . . . . . QS 27  
MAPITERKSYTIVBEEET . . . . . WS 20  
MANQRKPILPPLLEKKPVELVKPKHHC . . . . . 29  
MDSKQSSSELVFTYRRQKPELIAPKPE . . . . . P 28  
DFSFHYRKCOPELIAPEANET . . . . . P 21  
MSIQIKQSTMVRPAEEET . . . . . PN 19  
METMTMKYETISKEIIKPKSSPE . . . . . NN 25  
MEAALKLEVTKEVIKPKASSPE . . . . . RD 22  
MPMLMATRIDIIQKLNVYPRFQN 23

FIG. 6C

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FIG. 6D

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FIG. 6

TAX1 (SEQ ID NO: 28) LGD . FDDSNPSFQ . QLLFSLPLDTNF . . . . . KDLSSLVVQVZTRETCG . GE 156  
TAX2 (SEQ ID NO: 26) LOD . FNEYDPSFQ . QLVFNLRDVN . . . . . EDLHLLTVQVZTRETCG . GE 150  
aab61522 (SEQ ID NO: 61) ILEN . PNPN . ELNKLHPEFFHEVSDVP . . . . . LTVOVLTTEEECG . GL 41  
aab61523 (SEQ ID NO: 62) FLKC . PVPE . SLELLIP . . . VEAKSRE . . . AVTWEPVLLIQLANFESECG . GL 149  
aab95293 (SEQ ID NO: 63) VIAGIDVFD . VVKEFFTYYDR . . AVSYE . . . GHNRPIIAVQVYIZEN . . DGY 153  
aab97723 (SEQ ID NO: 64) LGDLTVPPNPAWLPLIFRNPGEEAYKI . . . . . LEMPAULIAQVTTETCG . GE 169  
aac17079 (SEQ ID NO: 65) LNLY . DPDE . SIAKLVPIKKHG . . . . . VIAIQVZQIKCG . SI 266  
aac18062 (SEQ ID NO: 66) FLLG . EESN . NL DLLVG . . . . . TETPZLAALQLNMEKCG . GL 144  
aac27152 (SEQ ID NO: 67) LGD . LVYPNPAFAQQLVTSQLQ . SLPKD . . . . DQEPLFVFOITSZKCG . GE 163  
aac99311 (SEQ ID NO: 68) ILKY . ELRS . YARDLVLPKRVTVGSED . . . . TTA . . . IVQLSHEDCG . GL 150  
aad12025 (SEQ ID NO: 69) FKD . FS . PTPEFENLM . PQVN NYKNPIE . . . . TIPZLFLAQVZKEKCG . GI 147  
caa20531 (SEQ ID NO: 70) LN . . . . YIENLDDQVALRLVPEIEIDYESNVVCYHPLAQLQVZKEACG . GE 160  
caa64636 (SEQ ID NO: 71) FGDELQPPPFCLE . ELLYDVPDSAGV . . . . LNCPEPLLILQVZTRLRCG . GE 159  
caa94432 (SEQ ID NO: 72) FWDTLPYSSMSQNNNIHHNALNSDEV . . . . LNSPZLILQVZTRLKG . GE 153  
cab06427 (SEQ ID NO: 73) FGD . FR . PNDDELHRVMVPTCDYSKGIS . . . . SFEPZLMMVQLTRERCG . GV 156  
cab10318 (SEQ ID NO: 74) FLKC . PDEFD . ALQQLLP LDVVDNPYVA . . . . AATWEPZLUVKATYEGCG . GM 152  
cab10319 (SEQ ID NO: 75) FLRN . INTD . SLSGFLPTLAAGE . . . S . . . PAAWEPZLSSVKVYTFGGSGV 143  
cab40761 (SEQ ID NO: 76) LGDLTQYNEFYENLVYKPSLDGDFSV . . . . MELAVVAAQVYTRFAEG . GY 156

FIG. 6F

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TAX1 (SEQ ID NO: 28) VVGVSFHHGVCDGRCQAQLKGLEMAR . GEVKLS . . . . .  
TAX2 (SEQ ID NO: 26) VVGTREHHSVSDGKGQILKGMGENAR . GEEFKPS . . . . .  
aab61522 (SEQ ID NO: 61) ALGIGLSSKLCDALSGLIEVN SWAFAEQQGQTDE . . . . .  
aab61523 (SEQ ID NO: 62) VITICVSSKKITDATSLAMEIIRGWWESSESSRG . . L . . . . .  
aab95293 (SEQ ID NO: 63) FIGCSVN YAVTDTGTSLWN EINTEVSSRGAKNVT . . . . .  
aab97723 (SEQ ID NO: 64) SLGIRLC H CICDGGFGAMQELGSWAT KTGKLIAD . . . . .  
aac17079 (SEQ ID NO: 65) VVGCTFDHDRVADAYSMNMELLISWAEISRS DVPI . . . . .  
aac18062 (SEQ ID NO: 66) VIGAQEN YIIGDMETMSTEMNSWAKACEVGIKE . . . . .  
aac27152 (SEQ ID NO: 67) AMGISTN ETFDKTTELENL SILLH . . EKPLS . . . . .  
aac99311 (SEQ ID NO: 68) AVAFGISKVA DGGTIASEMKDWWASSACYLSSS . . . . .  
aad12025 (SEQ ID NO: 69) SLSVN VSHAI VDGQSA LHISEWGRLLR . . GEPELE . . . . .  
caa20531 (SEQ ID NO: 70) TIGTALT HAVC DGYGVQAQIIHALTEL R . . ACKTEPS . . . . .  
caa64636 (SEQ ID NO: 71) IFLALRN ETMSDAPGLVQEMTAVGEMAR . . GGSAAPS . . . . .  
caa94432 (SEQ ID NO: 72) IFLCFNHTMADGF GIVQEMKATAEIAR . GAFAPS . . . . .  
cab06427 (SEQ ID NO: 73) SIGFAQHHHVCDGMAHFEENNNSWARIK . . GLLPA . . . . .  
cab10318 (SEQ ID NO: 74) AIGICITHEKIAADAASISTEIRSWAT KGENDA . . . . .  
cab10319 (SEQ ID NO: 75) AVSVSSKICDIASLVTEVKDWATTAKGKSN . . . . .  
cab40761 (SEQ ID NO: 76) SIGCTSKLLEDGTSNSHTHNKSN TTNKKEDVVIKEVH . . . . .

EIGEN

TAX1 (SEQ ID NO: 28) NRELVKLD . . DP . . KYLQFF~~E~~F . . EFLRAP . . . . SIV . . . . EKIVQ 227  
TAX2 (SEQ ID NO: 26) NEMVKPE . . DI . . MYLQFD~~H~~F . . DFTHPP . . . . LNL . . . . EKSIQ 221  
aab61522 (SEQ ID NO: 61) DLAKMEPPCDIEN . . . . LNMMATG~~I~~TKKE . . . . NIVT . . . . 107  
aab61523 (SEQ ID NO: 62) TASEVFPKP~~L~~DEL . . . . PSKPMDRKEEEVEMS . . CVT . . . . 218  
aab95293 (SEQ ID NO: 63) ISPAVLKV~~P~~QQGGPKVT~~F~~DENAPL~~R~~ERIFSRESIQLKAVVNKK . . . . 243  
aab97723 (SEQ ID NO: 64) DRET~~F~~KPR . . NP . . PMVKYP~~H~~H . . EYLPIEERSNLTNSLWD . . TKPLQ 249  
aac17079 (SEQ ID NO: 65) R~~S~~LLNPRRP~~L~~VMDPSIDQIYMPVTSLPPPQETTNPENLLAS . . . . 347  
aac18062 (SEQ ID NO: 66) GLAPLMPPSAKVLN . . . . IPPPSFEG . . . . VKFVS . . . . 210  
aac27152 (SEQ ID NO: 67) D~~R~~TLLKARDP~~P~~S . . . . VAFPH . . EL . . VKFQDCE~~T~~TVEATSEHLD~~E~~ 242  
aac99311 (SEQ ID NO: 68) VSDSIFPRQDNII . . . . CEQEFPTSK . . . . NCVE . . . . 216  
aad12025 (SEQ ID NO: 69) DRKILWAGEPLPPFVSPPKF~~D~~~~H~~K . . EFDQPPFLIGETDNVEERKKTIV . . 232  
caa20531 (SEQ ID NO: 70) QBERLVGKIDNKP . . GKVPGS~~H~~I . . D . . GFLATSAYLPT . . TDVV~~T~~ 237  
caa64636 (SEQ ID NO: 71) C~~R~~ELLNAR . . NP . . PQVTCT~~H~~H . . EYDEVRD~~T~~KGTIIPL . . DDMV~~H~~ 236  
caa94432 (SEQ ID NO: 72) QRALLTAR . . DP . . PRITERR~~H~~Y . . YDQVVDMKSGLIPV . . NSKID 230  
cab06427 (SEQ ID NO: 73) D~~R~~Y~~L~~HLRPRNPPQI . . KYSS~~S~~ . . QFE . . PFVPSLPNELLDGKT~~N~~KSQ . . 235  
cab10318 (SEQ ID NO: 74) AGANFYPPANEAF . . . . KLPADEQAGKRS . . SIT . . . . 221  
cab10319 (SEQ ID NO: 75) AETTIYPPP~~S~~HM . . . . YEQFPSTDSDNITSSKYVL . . . . 213  
cab40761 (SEQ ID NO: 76) DRRNLLVNRDAVRETNAAAI~~C~~LYQLIKQAMMTYQEQRNRL~~E~~LPDSGFV~~I~~ 256

FIG. 6H

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TAX1 (SEQ ID NO: 28)	TYFIDDEFETINYIKQSV	.MEEC.	251
TAX2 (SEQ ID NO: 26)	ASMVISSEERIINYIKRCM	.MEEC.	245
aab61522 (SEQ ID NO: 61)	RREVFRLRSSRERFSGNK	.	133
aab61523 (SEQ ID NO: 62)	KREVFDASKKKRAK	.ASRN	244
aab95293 (SEQ ID NO: 63)	KWLTVDNGEIDGVELLGKQSN	DKLNGKENGILTEMLESLEFGRNDAVSKPV	293
aab97723 (SEQ ID NO: 64)	KCYRISKEEQCRVKSIA	.QGED	273
aac17079 (SEQ ID NO: 65)	RIZYYIKANALQEQEQTLASSSSKN	.	373
aac18062 (SEQ ID NO: 66)	KREVNNENAIITRKEATEEDGGDD	.	244
aac27152 (SEQ ID NO: 67)	KTEKLSSSEQIKLKERA	.SET	265
aac99311 (SEQ ID NO: 68)	KTEKFPEAEKELSKAVEFG	.	242
aad12025 (SEQ ID NO: 69)	VMLPLSTSSQLQKLRSKANGSKH	.	257
caa20531 (SEQ ID NO: 70)	ETINIRAGDIEKREKDSSM	.MKEC	.
caa64636 (SEQ ID NO: 71)	KSEFFGPSEVSAIRRIV	.PHHL	.
caa94432 (SEQ ID NO: 72)	QLEFFSQLQIESTLRLQT	L.PAHL	.
cab06427 (SEQ ID NO: 73)	TLEIILSREQINTLQQKLDLSNN	.	260
cab10318 (SEQ ID NO: 74)	KREVFEASKVEDLERTKAASE	.	248
cab10319 (SEQ ID NO: 75)	KREVFPSSKIAELKHKAASES	.	239
cab40761 (SEQ ID NO: 76)	KTTELNGDATESMKKKSHEG	.	276

FIG. 61

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TAX1 (SEQ ID NO: 28) . CS . . SFEVASSMTWIAARTRAFQIPESEY . . . . . VKIILFGMDMRSFN 291  
TAX2 (SEQ ID NO: 26) . FS . . AEEVVVVALIWLARTKSFRIPPNEY . . . . . VKİTİFPİDMRNNSFD 285  
aab61522 (SEQ ID NO: 61) RVE . . . VLSVFIWSRFE . . MASTNHDDKTKIYT . . . LIHPYNLBRQAD 173  
aab61523 (SEQ ID NO: 62) RVE . . . AVTALFWRCV . . TKVSRLLSLTPRTSV . . LQILYYNLGRGV D 284  
aab95293 (SEQ ID NO: 63) AVEISSSEQSLCALLWRAITRARKLPSSKTT . . . . . FERMAYNCEHRLS 336  
aab97723 (SEQ ID NO: 64) VCS . . TFDAMAAHIWRSWVKALDVKPLDYN . . . . . LRILTFSYNNVERTE 315  
aac17079 (SEQ ID NO: 65) KLE . . . SFSAFLWKLVAEHAAKDPVPIKTSK . . . LGIVYDGERBLM 413  
aac18062 (SEQ ID NO: 66) RV D . . . LVTAFLSKSLIEMDCAKKEQTKSSRPSL . . MVHMNLRKRTK 286  
aac27152 (SEQ ID NO: 67) NVRVTGENVVTALVWZCKALSVAEEEGEET . NLERESTILYAYVDIIGGL . 313  
aac99311 (SEQ ID NO: 68) RVE . . . VLTAFLSRCATVAGSKAAKNNNGQSLPPVVLQAINLPILE 287  
aad12025 (SEQ ID NO: 69) AKGFTTRYETVTGHVWZCACKARGHSPEQPT . AL . . . GICIDTTERS&M . 299  
caa20531 (SEQ ID NO: 70) KESFTTYEVILSSYYIWKLRSRALKLNPDGIT . . . V . LGVAYGIERHVL D 304  
caa64636 (SEQ ID NO: 71) . CS . . TFEILTLVWZCRTMSLKPDPSEE . . . VRALCIYNAERS&F N 299  
caa94432 (SEQ ID NO: 72) . CP . . SEEVLTAFLVWZLRTIALQFKPSEE . . . VREFLCVMNLRSKID 293  
cab06427 (SEQ ID NO: 73) . . LSTYEVVVAHHVWZSVSKARGLSDHEEI . KL . . . IMPYDGERSBIN 300  
cab10318 (SEQ ID NO: 74) RVE . . . SVTALIWKCF . . VASSK . . TTTCDHKV . . LVQLANLRSKIP 286  
cab10319 (SEQ ID NO: 75) RVE . . . AIMSЛИWRCА . . RNSSRSNLLIPRQAV . . MWQAMDIDLRIIP 279  
cab40761 (SEQ ID NO: 76) . FMCSSSFFIAHLWKARTRALGRRDA . . . . . MVCLQFAVDIRKRTE 318

FIG. 6J

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FIG. 6K

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TAX1 (SEQ ID NO: 28) . . . MNHENVVAFADWSSRL 367  
TAX2 (SEQ ID NO: 26) . . . NDNF . KGRAVVKPSELDVN . . .  
aab61522 (SEQ ID NO: 61) . . . NENF . KGRILTKPSTLDAN . . .  
aab61523 (SEQ ID NO: 62) . . . DAVYVKKLQEDNRGHL . . . EFLNKQASGEIVNGEIVSSESFTSLCKE 259  
aab95293 (SEQ ID NO: 63) . . . S . . . LNCKEMSSSKSRIFFELLEEIG . KVYGRG . NEMDLWMSNEWCKL 366  
aab97723 (SEQ ID NO: 64) . . . ADQLNQSVAAHQDGRISSVADWEANPRCFPLGNADGASVTMGSSESPRE 416  
aac17079 (SEQ ID NO: 65) . . . SVTKEHFLNLIDWVETCRPTPAVSRIYSVGSSGRSF 500  
aac18062 (SEQ ID NO: 66) . . . CGEIISSEVAKVDDAEVVSSSMVLNSVREFFYYEWGKEKVNVELYTSEWWCREF 371  
aac27152 (SEQ ID NO: 67) . . . TDEYARSAIDWGELEYKG . . . FPHGEVILVSEWWKL 388  
aac99311 (SEQ ID NO: 68) . . . KNLSREKLTYYVAQMEEEFVKSSLKEFDIISNFL . . . DIDAYLSDSEWWCREF 374  
aad12025 (SEQ ID NO: 69) . . . TNEYVMIGIEYLNQKDLKQFDLHALGSTEGPFYGNPNLGLGVVSEWWTL 391  
caa20531 (SEQ ID NO: 70) . . . GYIEELKNTERLMDDDSMFE . . . GVSDDGLEFLTDWRNI 386  
caa64636 (SEQ ID NO: 71) . . . TEEYMKSVADLMVLKGRPH . . . FTVVVRTFLVSDVTRG 376  
caa94432 (SEQ ID NO: 72) . . . TMEYIKSETVDLMVIKGRPY . . . FTVVVGSMMSDLTRI 368  
cab06427 (SEQ ID NO: 73) . . . DDDYLRSAIDHTESKPGL . . . PVPYMGSSPEKTLY . . PNVLVNNEWGRI 386  
cab10318 (SEQ ID NO: 74) . . . GTVILDDEGGSSDSSSMIGSKLANLMLTNYSRLSYETHEPYTYVSSWWCKL 376  
cab10319 (SEQ ID NO: 75) . . . NEMIKESLQGNTIGQSLLSLMAETVSES . . . TEIDRYIMSSWWCKR 363  
cab40761 (SEQ ID NO: 76) . . . DOGYINSYMEALGGSSNDGNTPP . . . KELTLIISDWWTKM 397

FIG. 6L

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TAX1 (SEQ ID NO: 28) G . F D E V D E G G N A Y S V S P V Q Q Q S . . A L A M Q N Y F L K P S K N K P D G I K I L M 414  
TAX2 (SEQ ID NO: 26) G . F Y E A D E G G N A Y N V S P M Q Q Q R E H E L A M Q N Y F L E R S A K N M I D G I K I L M 410  
aab61522 (SEQ ID NO: 61) P V Y . E A D E G G K P L W V A S . . . . A R M S . Y K N L . . V A F I D T K E G D G I E A W I 300  
aab61523 (SEQ ID NO: 62) G L Y . D A D E G G K P Y W V T G . . . . R G T S H F K N L . . M L L I D T K D G E G I E A W I 408  
aab95293 (SEQ ID NO: 63) P M Y . D N D E G W G R P Y A V R S . . . . G R S N K F D G K I S A . F P G R E G N G T V D L E V 459  
aab97723 (SEQ ID NO: 64) E M Y E T A D E G W G K P Y Y A G P I . . D L R P T P Q V C V L L P Q G G V E S G N D Q S M V V C L 441  
aac17079 (SEQ ID NO: 65) P V N . Q V D E G W G S P Y F G S Y . . . . H F P W G G S A G Y V M P M P S S V D D R D W M V Y L 544  
aac18062 (SEQ ID NO: 66) P L Y . E V D E G W G I P S I L V D T . . . . T A V P F . . . . G L I V L M D E A P A G D G I A V R A 412  
aac27152 (SEQ ID NO: 67) G . F A E V E Y P W G K P K Y S C P V V Y H R K D I . . . . V L L E P D I D G D S K G V Y V L A 431  
aac99311 (SEQ ID NO: 68) P F Y . D V D E G W G K P I W V . C . . . . L F Q Q P Y I R N C V V M M D Y P F G D D Y G I E A I V 417  
aad12025 (SEQ ID NO: 69) P . M Y G L D E G W G K E F Y T G P G T H D F D G D . . . . S L I L P D Q N E D G . S V I L A T 433  
caa20531 (SEQ ID NO: 70) G W F G S M D E G W N E E P Y N L R P L . T Q R E S T V H V G M I L K P S K S D P S M E G G V K V I M . 435  
caa64636 (SEQ ID NO: 71) G . F G E V D E G W G K A Y Y G G P A K G G V G A I P G V A S F Y I P F K . N K K G E N G I V V P I 424  
caa94432 (SEQ ID NO: 72) G . V E N V D E G W G K A I F G G P T T G A R I T R G L V S F C V P F M . N R N G E R G T A L S L 416  
cab06427 (SEQ ID NO: 73) P . Y Q A M D E G W G S P T F F G I S N I F Y D G Q . . . . C F L I P S R D G D G . S M T L A I 428  
cab10318 (SEQ ID NO: 74) P L Y . E A S E G G D S P Y W V V G . . . . N V S P V L G N L . . A M L I D S K D G Q G I E A F V 418  
cab10319 (SEQ ID NO: 75) P F Y . E V D E G S S S P Y W V G Y . . . . A S H T I Y D N M V G V V L I D S K E G D G V E A W I 407  
cab40761 (SEQ ID NO: 76) P . F H N V G E G N G . . . . G E P A D Y M A P L C P P V P Q V A Y F M K N P K D A K G V L V R I 441

FIG. 6M

439  
TAX1 (SEQ ID NO: 28) FLLPLSKKKSEKKIEMEAMMK . KYVAKV . . . . .  
TAX2 (SEQ ID NO: 26) FMPASMVVKPEKKIEMEVTTIN . KYVAKICNSKL . . . . .  
aab61522 (SEQ ID NO: 61) NLNDQNDMSRZEADEELLRYVSSNPSVMVSVS . . . . .  
aab61523 (SEQ ID NO: 62) TLTEEOOMSLEECDOELLESASLNPPVL . . . . .  
aab95293 (SEQ ID NO: 63) VASPETMAGIESDGEEMRYVTNK . . . . .  
aab97723 (SEQ ID NO: 64) CLPPTAVHTETRLSLNDHK . . . . .  
aac17079 (SEQ ID NO: 65) HLTKGQIZREFIEEEASHVILKPIDNDYLIK . . . . .  
aac18062 (SEQ ID NO: 66) CLSEHDMDIQEZQQHHQLLSYVS . . . . .  
aac27152 (SEQ ID NO: 67) ALPSKEMSKEQHWWFEDTLC . . . . .  
aac99311 (SEQ ID NO: 68) SFEQEKMSSAEKNEQLLQFVSN . . . . .  
aad12025 (SEQ ID NO: 69) CLQVAHMEAAZKKHEYEDI . . . . .  
caa20531 (SEQ ID NO: 70) KLPDRDAMVEEKREMATMKKLYFGDTN . . . . .  
caa64636 (SEQ ID NO: 71) CLPGEFAMETEVKELDGMLKVDAPL . VNSSNYAIIRPAL .  
caa94432 (SEQ ID NO: 72) CLPPPAMEERTRANVHASLQVKQVVDAVDSSHMQTIQSASK .  
cab06427 (SEQ ID NO: 73) NLFSSHLRSREKKYFYDF . . . . .  
cab10318 (SEQ ID NO: 74) TLEPENMSSSEQNPELLAFATMNPSSVLV . . . . .  
cab10319 (SEQ ID NO: 75) SLPEEDMSVENVDDQELLAYAVLNPPVVA . . . . .  
cab40761 (SEQ ID NO: 76) GLDPRDVNGESNHFLDC . . . . .

FIG. 6N

Donald L. Stephens, Jr.  
Our Ref. No. 4630-59094/DLS/JOC  
Inventors: Croteau et al.  
For: TRANSACYLASES OF THE PACLITAXEL  
BIOSYNTHETIC PATHWAY  
Application No. 09/866,570, filed: May 25, 2001  
Mailed: September 20, 2001  
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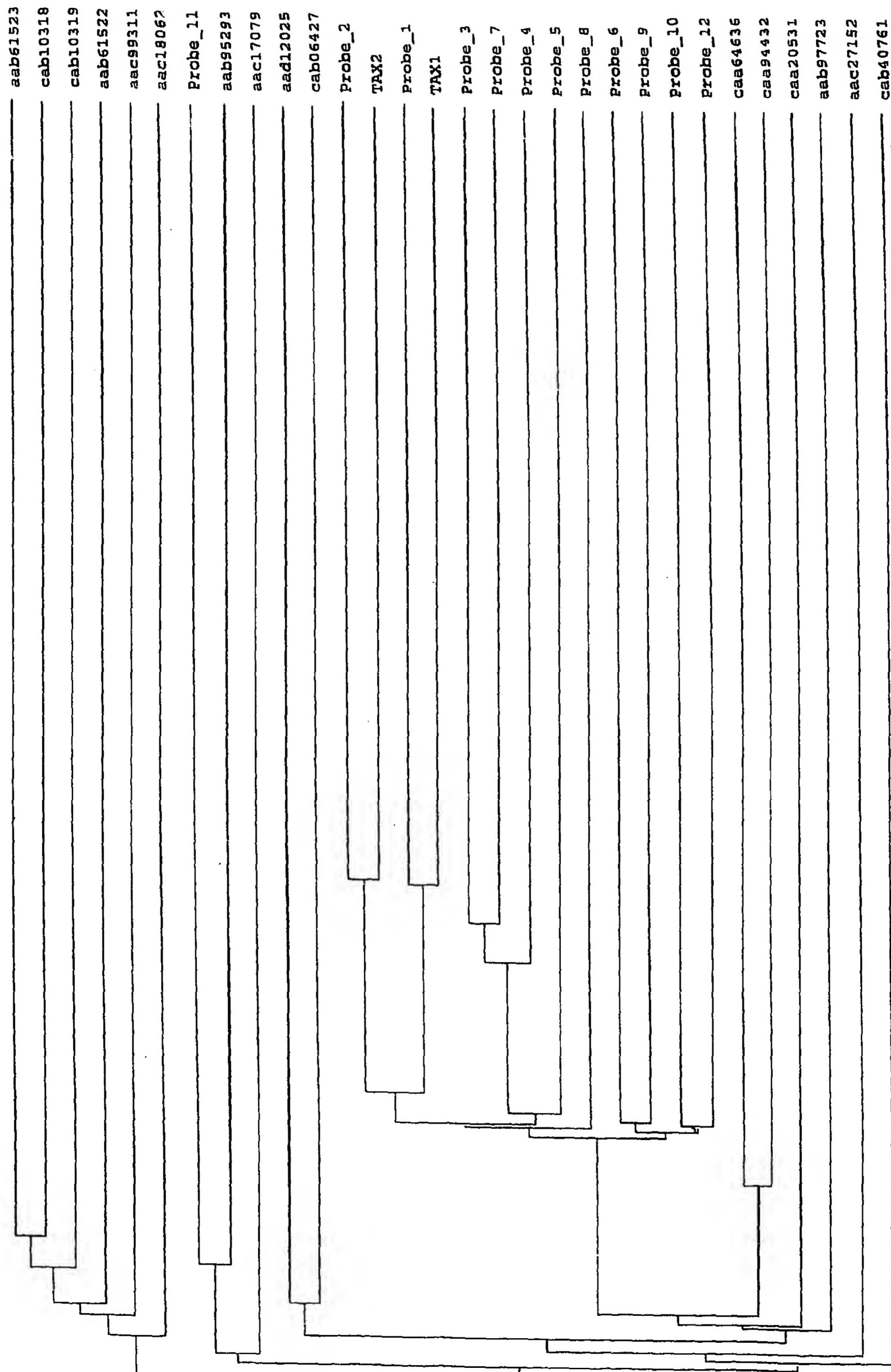


FIG. 7

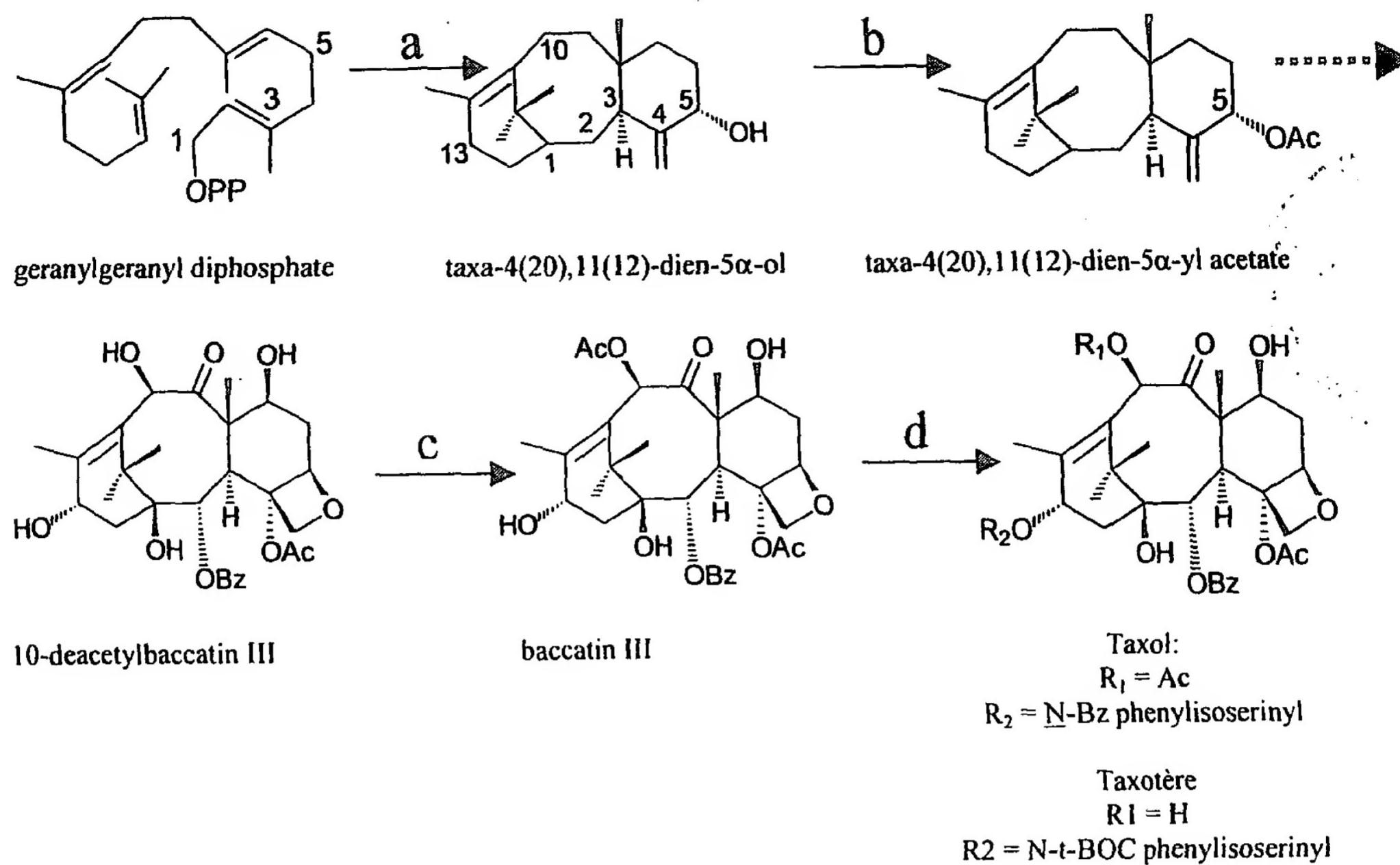


FIG. 8A

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Our Ref. No. 4630-59094/DLS/JOC  
Inventors: Croteau et al.  
For: TRANSACYLASES OF THE PACLITAXEL  
BIOSYNTHETIC PATHWAY  
Application No. 09/866,570, filed: May 25, 2001  
Mailed: September 20, 2001  
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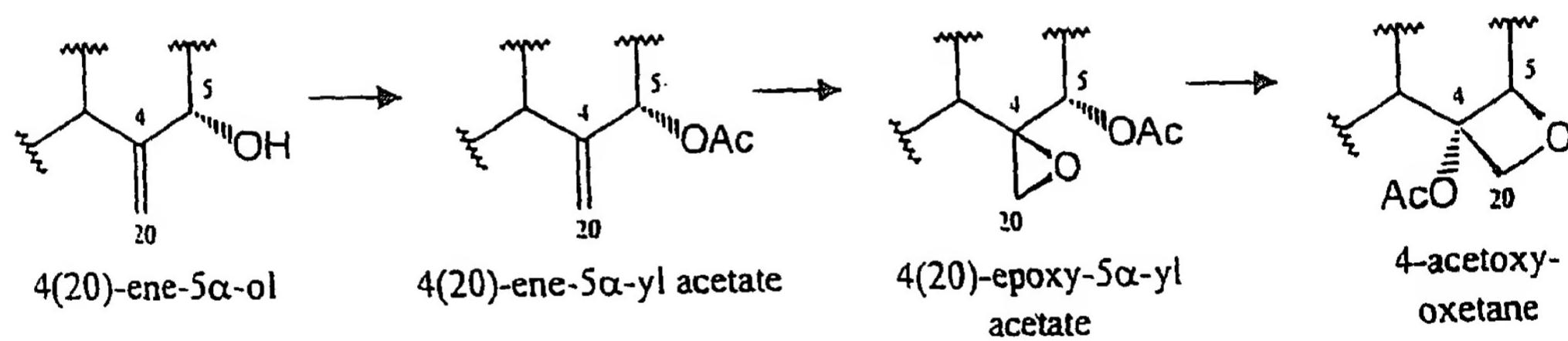


FIG. 8B

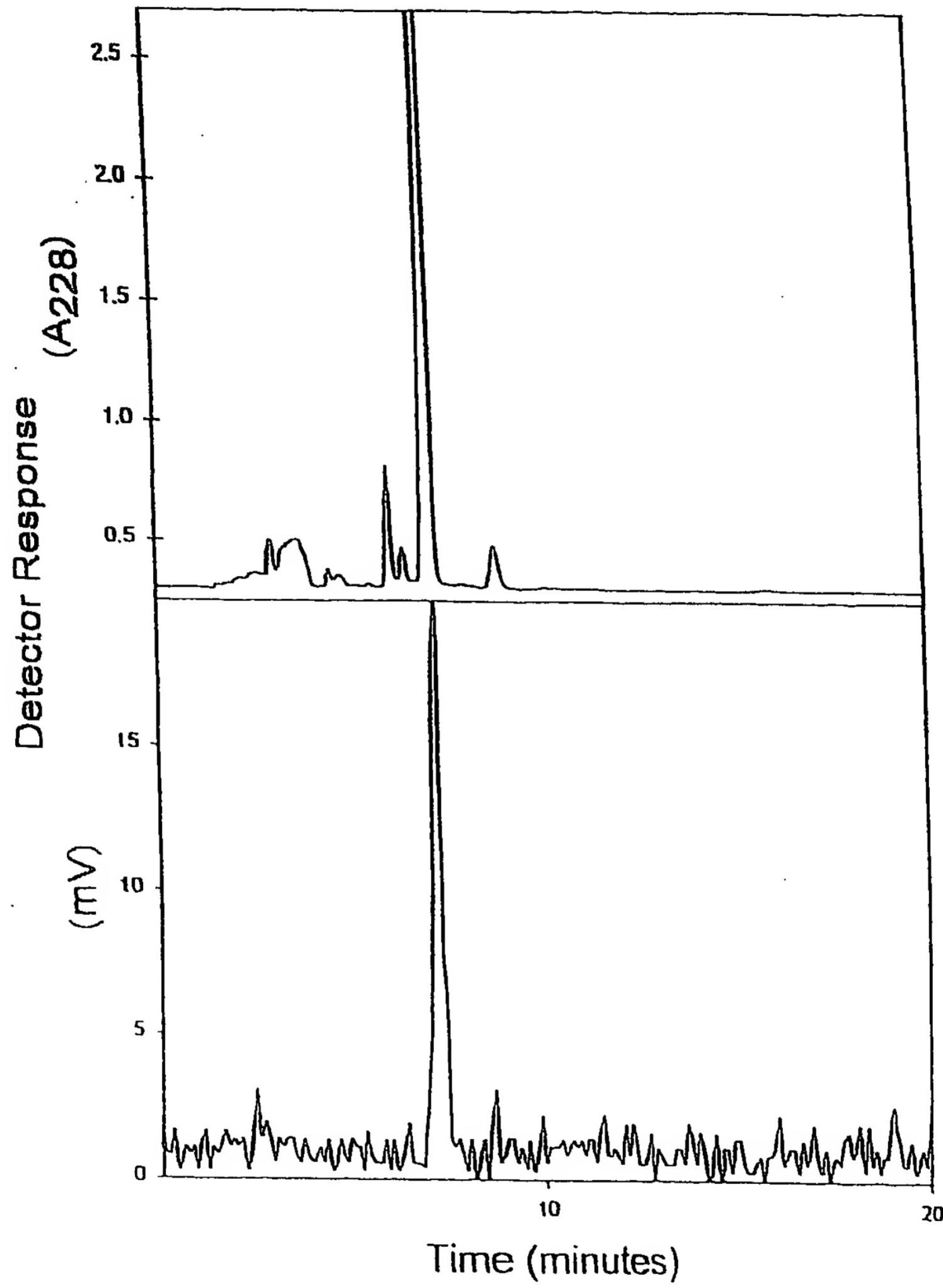


FIG. 9A

FIG. 9B

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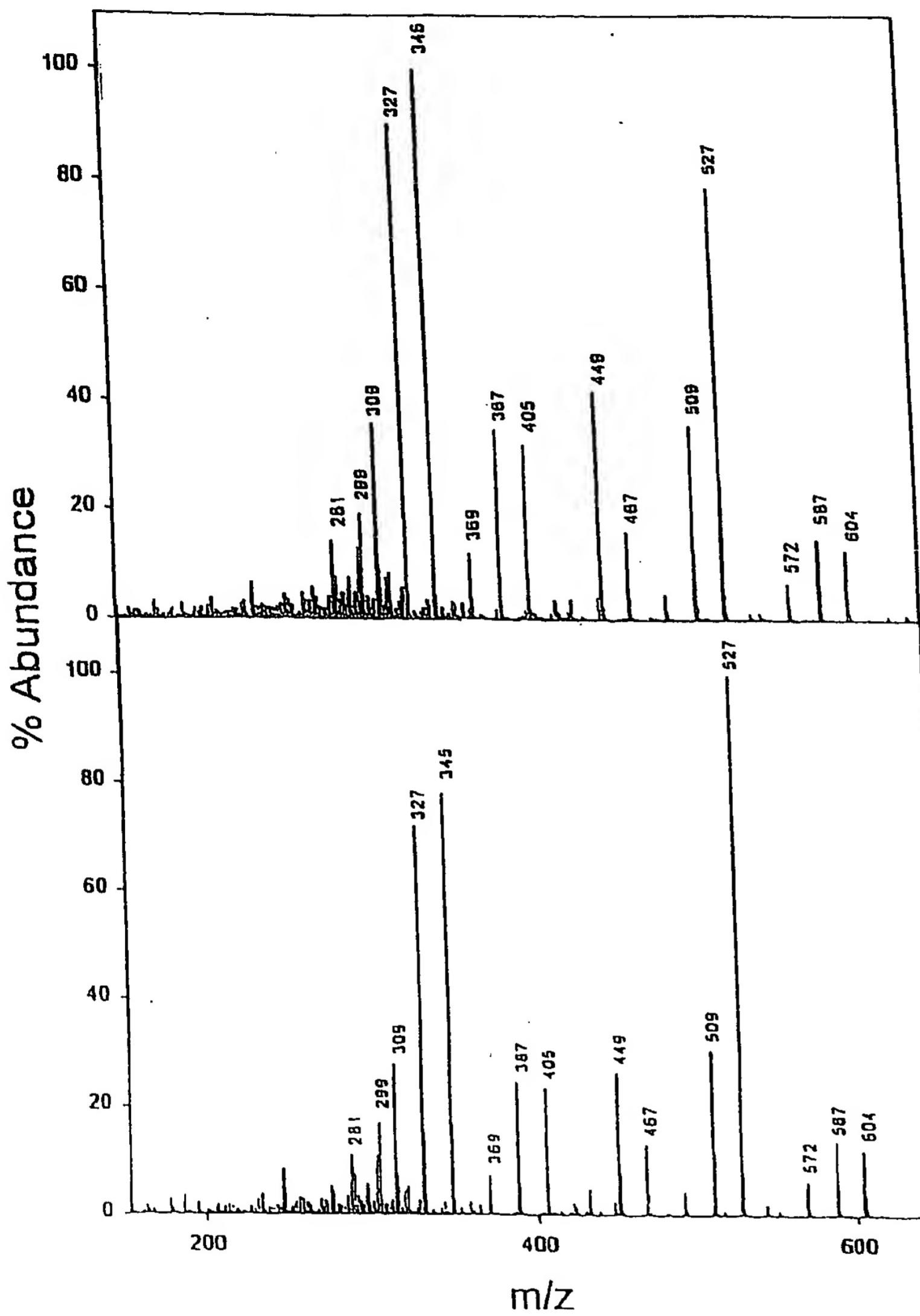


FIG. 10A

FIG. 10B